

ENVIRONMENTAL LIMITATIONS ON BIOMASS PRODUCTION FROM COLORADO'S FORESTS

Outline of presentation by Rocky Smith, Colorado Wild at the conference on the future of forest biomass in Colorado, February 21, 2008.

I. BIG PICTURE:

--Biomass will never meet more than a small portion of our energy needs, though it can make a contribution to overall energy production. This alone means we should not encourage establishment of a big biomass industry in Colorado.

II. ENVIRONMENTAL LIMITATIONS ON BIOMASS PRODUCTION FOR ENERGY IN COLORADO

A. Soils.

- Dead wood is needed to renew soil, as well as for other purposes (retain moisture, reduce erosion, provide wildlife habitat, etc.).
- Heavy harvesting now would rob forests of future soil.
- Effects are difficult to measure because the time needed for soil formation greatly exceeds a human lifetime, thus we must err on the side of caution.
- Need to leave wood pieces in all diameter classes.
- There are shorter-term adverse impacts on the soil from heavy equipment use, such as compaction and displacement.

B. Fire.

- Intensive logging gets us further and further away from having fire play its rightful role in forest management.
- Forests burn because they're meant to. We need to learn to live and work with fire while still protecting private property and infrastructure.
- Fires provide benefits such as creating new soil.

C. Roads.

- Ecologically, roads are one of the worst impacts to the landscape. They cause erosion and stream sedimentation, fragment wildlife habitat, and allow easy introduction and spread of noxious weeds.
- Some roads are needed, but constructing road networks in many watersheds across the landscape would be quite harmful.

D. Water Quality and Quantity.

- Heavy removal of biomass can cause problems in watersheds, specifically stream sedimentation from the network of roads needed to access and remove the wood.
- Mitigation measures can help, but there would still be impacts.
- Water may be needed for industry to get established, but it is already in short supply, as many river systems are over-appropriated.

E. Air Quality.

--Certain types of industry may have a high level of emissions, making compliance with air quality laws difficult.

--Increased motor vehicle use in gathering and transporting biomass could cause problems.

--Places like Grand County, where temperature inversions are common, would especially be affected.

--Air quality could also be bad if a large amount of the beetle-killed trees burned, so consider prescribed (controlled) burning.

F. Wildlife.

--Removing trees destroys or degrades structure needed for existing and future wildlife habitat.

--Downed logs could help for future lynx denning habitat.

G. Ecological Sustainability.

--Industry must not be so large that its demands for raw material overwhelm the ecological capability of the landscape, as happened with intensive commercial logging in the Pacific Northwest from roughly the late 1940s to the late 1980s.

--Tail must not “wag the dog”, i. e., industry must not dictate how land is managed at the expense of all the other resources. Rather, ecological capability and the need to provide for other resources (wildlife, watershed, recreation) must determine what raw material can be provided.

--To get started, industry needs a guarantee of supply, but that commits agencies to providing a level of biomass that might not be sustainable.

III. SOCIO-ECONOMIC CONCERNS.

A. Size.

--Industry must be sized appropriately for the landscape. If too large, it is economically unsustainable and could contribute to the “boom and bust” syndrome.

B. Effect on tourism.

--Communities are dependant on tourism and recreation, but intensive industry might adversely affect people’s desire to visit such communities.

IV. CONFIGURE BIOMASS INDUSTRY TO BE “SCALABLE AND SUSTAINABLE”

A. Keep industry **small** to avoid boom and bust syndrome and not outstrip the capability of the land to produce.

B. Industry should be **local**, i. e., serving a small area rather than a very large area or the whole state. This will keep transportation costs down.

C. To the extent possible, industry should be **flexible**, i. e., able to produce an array of products rather than just one product.